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Very low power RF transceiver targets demanding applications.

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Author(s)

Evjen-P-M.

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J Journal Paper.

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Abstract

The new RF transceiver CC1000 from Chipcon is specifically designed to comply with stringent requirements for short–range RF applications. The CC1000 is a true single–chip UHF transceiver developed for very low power consumption and low voltage operation. Based on a 0.35 mm CMOS technology, this is the only product currently available that offers a unique combination of low cost, high integration, high performance and flexibility, thus setting a new standard for short–range wireless communication devices. The CC1000 is designed primarily for FSK systems in the ISM/SRD bands at 315, 433, 868 and 915 MHz. However, it can easily be programmed for operation at other frequencies between 300 and 1000 MHz. The low power consumption and the high integration level make the CC1000 ideal for *remote* keyless entry, *home automation,* automatic *meter* reading and wireless alarm and security systems.

Descriptors

CMOS–integrated–circuits; frequency–shift–keying; transceivers; UHF–devices; UHF–integrated–circuits.

Keywords

RF transceiver; Chipcon CC1000; UHF transceiver; low power consumption; low voltage operation; 0.35 mm CMOS technology; low cost; high integration; high performance; flexibility; short range wireless communication devices; FSK systems; short range devices; ISM systems; *remote* keyless entry; *home automation;* automatic *meter* reading; wireless alarm systems; wireless security systems; 300 to 1000 MHz.

Classification codes

```
B6250      (Radio links and equipment).
B2570D     (CMOS integrated circuits).
B1350H     (Microwave integrated circuits).
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Numerical indexing

frequency: 3.0E+08 to 1.0E+09 Hz.

Copyright statement

Remote energy consumption reading.

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Author(s)
> Hieber-Z; Pudlowski-Z-J.

Author affiliation
> ANSYS Pty Ltd, Gladesville, NSW, Australia.

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> Proceedings of Electrical Engineering Congress. EEC 94, vol.2, Sydney, NSW, Australia, 24-30 Nov. 1994. In: p.659-62 vol.2, 1994.

Publication year
> 1994.

Language
> EN.

Publication type
> CPP Conference Paper.

Treatment codes
> P Practical.

Abstract
> This paper discusses the practical development and implementation of an interface for use in communications along power lines, in this case household wiring. It looks at the application of such a *device* in *home automation* and develops ideas for its use in *remote meter* reading. The software and hardware described in this paper were developed in the course of post-graduate studies. The work undertaken could later be used as a framework for further development and research into the area of computer retrieval and communications along power lines, particularly in the area of *remote meter* reading. The practical design, although still in the developmental stages, may also be used in industry for example, *remote* reading of electrical meters at the customer`s side. Further work may be possible to adapt future design to obtain *remote meter* readings back to the supply authority`s offices, using personal computers. (4 refs).

Descriptors
> carrier-transmission-on-power-lines; microcomputer-applications; peripheral-interfaces; power-consumption; power-engineering-computing; power-system-measurement; signalling; telemetry.

Keywords
> impedance matching transformer; computer interface; *remote* energy consumption reading; power line communication; household wiring; personal computers; post graduate studies.

Classification codes
```
B8150     (Power system measurement and metering).
B7210F    (Telemetering systems).
B6240J    (Power line systems).
B6210J    (Telemetry).
C7410B    (Power engineering computing).
C5610P    (Peripheral interfaces).
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Search strategy

No.	Database	Search term	Info added since	Results
1	INZZ	remote NEAR home NEAR automation NEAR (appliance OR device OR meter)	unrestricted	2

Saved: 31-Aug-2004, 16:52:23 CET

L Number	Hits	Search Text	DB	Time stamp
4	0	6049829.pn. and (verif$3 or authenticate or approve or authori$3 or attest or certif$3 or confirm or "give permission" or permit or prove or sanction or substantiate or test or uphold or validate or warrant) and (translate or interpret or read or render or transform or understand or ascertain or change or channel or determine or "find out" or iterate)	USPAT; US-PGPUB	2004/08/31 08:31
5	1	6049829.pn. and (translate or interpret or read or render or transform or understand or ascertain or change or channel or determine or "find out" or iterate)	USPAT; US-PGPUB	2004/08/31 08:31
8	1	6453687.pn. and digital	USPAT; US-PGPUB	2004/08/31 09:12
-	0	((interrogate NEAR5 device) NEAR5 interval)	USPAT; US-PGPUB	2004/08/26 13:43
-	54	((interrogate SAME device) SAME interval)	USPAT; US-PGPUB	2004/08/26 13:33
-	14	(((interrogate SAME device) SAME interval)) and network	USPAT; US-PGPUB	2004/08/26 13:39
-	2	((((interrogate SAME device) SAME interval)) and network) and (interrogate SAME reply)	USPAT; US-PGPUB	2004/08/26 13:43
-	0	(((interrogate NEAR5 device) NEAR5 interval) SAME reply)	USPAT; US-PGPUB	2004/08/26 13:44
-	1	(((interrogate SAME device) SAME interval) SAME reply)	USPAT; US-PGPUB	2004/08/26 13:45
-	36	(((request SAME device) SAME interval) SAME reply)	USPAT; US-PGPUB	2004/08/26 13:46
-	11	(((request SAME device) SAME interval) SAME reply) SAME network	USPAT; US-PGPUB	2004/08/26 13:46
-	4	((((request SAME device) SAME interval) SAME reply) SAME network) and @ad<20010501	USPAT; US-PGPUB	2004/08/26 13:50
-	2	((((send SAME device) SAME interval) SAME reply) SAME network) and @ad<20010501	USPAT; US-PGPUB	2004/08/26 13:53
-	8	((((send SAME device) SAME (interval or delay or period) SAME reply) SAME network) and @ad<20010501)	USPAT; US-PGPUB	2004/08/26 14:04
-	2	((((send SAME (measurement or meter)) SAME (interval or delay or period) SAME reply) SAME network) and @ad<20010501)	USPAT; US-PGPUB	2004/08/26 14:09
-	5090	digital NEAR5 meter	USPAT; US-PGPUB	2004/08/30 10:19
-	2	(digital NEAR5 meter) same reply	USPAT; US-PGPUB	2004/08/26 14:26
-	17	(("4,995,053") or ("5086385") or ("5,323,307") or ("5,400,246") or ("5,699,276") or ("5801940") or ("5,880,677") or ("5,886,894") or ("6,005,861") or ("6,061,602") or ("6,061,603") or ("6,104,334") or ("6,104,963") or ("6,108,696") or ("6,121,593") or ("6,138,150") or ("6.140,987") or ("6,160,993")).PN.	USPAT; US-PGPUB	2004/08/26 14:29
-	0	("l17andreply").PN.	USPAT; US-PGPUB	2004/08/26 14:30
-	7	"l17" AND reply	USPAT; US-PGPUB	2004/08/26 14:32
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-	16	((("4,995,053") or ("5086385") or ("5,323,307") or ("5,400,246") or ("5,699,276") or ("5801940") or ("5,880,677") or ("5,886,894") or ("6,005,861") or ("6,061,602") or ("6,061,603") or ("6,104,334") or ("6,104,963") or ("6,108,696") or ("6,121,593") or ("6,138,150") or ("6.140,987") or ("6,160,993")).PN.) and (reply or answer or respond or response)	USPAT; US-PGPUB	2004/08/26 15:09

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	211	((interrogate or query or send or contact or "establish connection" or inquire or "make contact with" or seek) NEAR5 (device or meter or measuring or appliance or apparatus or machine or controller or instrument or sensor) NEAR5 (reply or respond or response or answer or tell or say or state)) and (browser or web) and appliance	USPAT; US-PGPUB	2004/08/26 15:17
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-	32	(digital NEAR5 meter) and (remote near5 server) and @ad<20010510	USPAT; US-PGPUB	2004/08/30 10:21
-	14	(digital NEAR5 meter) and (remote near5 server) and @ad<20010510 and gateway	USPAT; US-PGPUB	2004/08/30 10:22
-	15	(digital NEAR5 meter) and (remote near5 server) and @ad<20010510 and (local near5 server)	USPAT; US-PGPUB	2004/08/30 10:22
-	9	(digital NEAR5 meter) and (remote near5 server) and @ad<20010510 and (local near5 server) and gateway	USPAT; US-PGPUB	2004/08/30 10:26
-	15	(digital NEAR5 meter) and (remote near5 server) and @ad<20010510 and (local near5 server)	USPAT; US-PGPUB	2004/08/30 10:30
-	2	(website near5 remote near5 server) and @ad<20010510 and (website near5 local near5 server)	USPAT; US-PGPUB	2004/08/30 10:59
-	129	(gateway near5 including near5 server) and @ad<20010510	USPAT; US-PGPUB	2004/08/30 11:00
-	36	(gateway near5 including near5 server) and @ad<20010510 and (remote near5 server)	USPAT; US-PGPUB	2004/08/30 11:24
-	2646	(gateway near3 server) and @ad<20010510	USPAT; US-PGPUB	2004/08/30 11:25
-	5	(gateway ADJ2 including ADJ2 server) and @ad<20010510	USPAT; US-PGPUB	2004/08/30 11:29
-	1401	(gateway ADJ2 server) and @ad<20010510	USPAT; US-PGPUB	2004/08/30 11:30
-	0	6049806.pn. and (gateway near server)	USPAT; US-PGPUB	2004/08/30 11:32
-	0	6049806.pn. and (gateway near5 server)	USPAT; US-PGPUB	2004/08/30 11:32
-	0	(client NEAR5 "remote server") and ("gateway including server")	USPAT; US-PGPUB	2004/08/30 11:35
-	1066	(client NEAR5 "remote server")	USPAT; US-PGPUB	2004/08/30 11:36
-	466	(client NEAR5 "remote server") and @ad<20000510	USPAT; US-PGPUB	2004/08/30 11:36
-	161	(client NEAR5 "remote server") and @ad<20000510 and gateway	USPAT; US-PGPUB	2004/08/30 11:36
-	1	(client NEAR5 "remote server") and @ad<20000510 and (gateway NEAR local NEAR server)	USPAT; US-PGPUB	2004/08/30 11:36
-	25	gateway near translator	USPAT; US-PGPUB	2004/08/30 15:03
-	6	gateway near translator and @ad<20010510	USPAT; US-PGPUB	2004/08/30 15:03